

WHAT IS CLAIMED IS:

1. An apparatus for editing video/audio data in which image and sound data are multiplexed, comprising:

means for designating a range of the video/audio data to be an edition object by using a deletion start frame and deletion end frame thereof; and

edition control means for rewriting a header of video data in the designated range to constitute nullified data and for rewriting a header of audio data including the same synchronous reproduction time in the designated range to constitute the nullified data.

2. The apparatus according to claim 1, wherein said edition control means rewrites an ID of the header of the video data and audio data in the designated range with a padding stream ID to constitute the nullified data.

3. The apparatus according to claim 1, wherein said edition control means re-encodes a frame next to the deletion end frame of the video data as a frame which does not require information of another frame in extension to nullify the video data to the deletion end frame from the deletion start frame, when the next frame is a frame which requires the information of another frame in the extension.

4. The apparatus according to claim 1, wherein said edition control means removes the nullified video/audio data part and writes the video/audio data into a writable recording medium, when duplicating the edited video/audio data in the recording medium.

5. The apparatus according to claim 4, wherein

said edition control means judges the nullified video/audio data part based on a stream ID of the video/audio data to remove the nullified video/audio data part, and writes the video/audio data in the writable recording medium, when duplicating the edited video/audio data in the recording medium.

6. The apparatus according to claim 4, wherein said edition control means acquires a reproduction time of the video data before/after the nullified video/audio data part, obtains a difference between the reproduction time before the nullified video/audio data part and that after the nullified video/audio data part, which is an offset value, uses the offset value to correct the reproduction time of the video/audio data of and after the nullified video/audio data part, and writes the video/audio data in the recording medium.

7. The apparatus according to claim 4, wherein said edition control means acquires a reproduction time of the video data before/after the nullified video/audio data part, obtains a difference between the reproduction time before the nullified video/audio data part and that after the nullified video/audio data part, which is an offset value, and uses the offset value to correct the reproduction time of the video/audio data of and after the nullified video/audio data part in a nullification process of the video/audio data.

8. The apparatus according to claim 4, wherein said edition control means rewrites the header of video data and the audio data in the designated range, using a private header indicating a data size to be nullified, to constitute the nullified data, and skips reading the nullified video/audio data part, referring to the data size

of the private header, to write the video/audio data in the recording medium, when duplicating the edited video/audio data into the writable recording medium.

5           9. The apparatus according to claim 1, further comprising:

          edition position extraction means for extracting a format change part of the audio data in the video/audio data which is the edition object to provide a range of the video  
10       data including the same reproduction time as that in the format change part as the deletion start frame and the deletion end frame.

          10. The apparatus according to claim 1, wherein  
15       said video/audio data is MPEG data, and  
          said edition control means rewrites packet headers of said video data and said audio data to constitute the nullified data.

20           11. The apparatus according to claim 10, wherein  
          said edition control means re-encodes the frame next to the deletion end frame of the video data as an I frame to nullify the video data including the deletion start frame to the deletion end frame, when the next frame is not the I  
25       frame.

          12. A method of editing video/audio data in which image and sound data are multiplexed, comprising the steps of:

30           designating a range of the video/audio data to be an edition object by using a deletion start frame and deletion end frame thereof; and

          rewriting a header of video data in the designated

range to constitute nullified data and rewriting a header of audio data including the same synchronous reproduction time in the designated range to constitute the nullified data.

5           13. The method according to claim 12, wherein  
said rewriting step comprises the step of  
rewriting an ID of the header of the video data and  
audio data in the designated range with a padding stream ID  
to constitute the nullified data.

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14. The method according to claim 12, wherein  
said rewriting step comprises the step of  
re-encoding a frame next to the deletion end frame  
of the video data as a frame which does not require  
15 information of another frame in extension to nullify the  
video data to the deletion end frame from the deletion start  
frame, when the next frame is a frame which requires the  
information of another frame in the extension.

20           15. The method according to claim 12, wherein  
said rewriting step comprises the steps of  
removing the nullified video/audio data part, when  
duplicating the edited video/audio data in the recording  
medium and

25           writing the video/audio data into a writable  
recording medium.

16. The method according to claim 15, wherein  
said rewriting step further comprises the steps of  
30           judging the nullified video/audio data part based on  
a stream ID of the video/audio data to remove the nullified  
video/audio data part, when duplicating the edited  
video/audio data in the recording medium and

writing the video/audio data in the writable recording medium,.

17. The method according to claim 15, wherein  
5 said rewriting step further comprises the steps of  
acquiring a reproduction time of the video data  
before/after the nullified video/audio data part,  
obtaining a difference between the reproduction time  
before the nullified video/audio data part and that after the  
10 nullified video/audio data part, which is an offset value,  
using the offset value to correct the reproduction  
time of the video/audio data of and after the nullified  
video/audio data part, and  
writing the video/audio data in the recording medium.

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18. The method according to claim 15, wherein  
said rewriting step further comprises the steps of  
acquiring a reproduction time of the video data  
before/after the nullified video/audio data part,  
20 obtaining a difference between the reproduction time  
before the nullified video/audio data part and that after the  
nullified video/audio data part, which is an offset value,  
and  
using the offset value to correct the reproduction  
25 time of the video/audio data of and after the nullified  
video/audio data part in a nullification process of the  
video/audio data.

19. The method according to claim 15, wherein  
30 said rewriting step further comprises the steps of  
rewriting the header of the video data and the audio  
data in the designated range, using a private header  
indicating a data size to be nullified, to constitute the

nullified data, and

skipping reading the nullified video/audio data part,  
referring to the data size of the private header, to write  
the video/audio data in the recording medium, when

5 duplicating the edited video/audio data into the writable  
recording medium.

20. The method according to claim 12, further  
comprising the step of:

10 extracting a format change part of the audio data in  
the video/audio data which is the edition object to provide a  
range of the video data including the same reproduction time  
as that in the format change part as the deletion start frame  
and the deletion end frame.

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21. The method according to claim 12, wherein  
said video/audio data is MPEG data, and  
said rewriting step comprises the step of rewriting  
packet headers of said video data and said audio data to  
20 constitute the nullified data.

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22. The method according to claim 21, wherein  
said rewriting step comprises the step of  
re-encoding the frame next to the deletion end frame  
25 of the video data as an I frame to nullify the video data  
including the deletion start frame to the deletion end frame,  
when the next frame is not the I frame.

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23. A computer program for enabling a computer to  
30 execute a method of editing video/audio data in which image  
and sound data are multiplexed, the method comprising the  
steps of:

designating a range of the video/audio data to be an

edition object by using a deletion start frame and deletion end frame thereof; and

rewriting a header of video data in the designated range to constitute nullified data and rewriting a header of audio data including the same synchronous reproduction time in the designated range to constitute the nullified data.